

**PATENT**

**MS177851.01/MSFTP954US**

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Date: February 22, 2007

/Rebecca Stanford/  
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re patent application of:

Applicant(s): Eric J. Horvitz, *et al.*

Examiner: Alina A. Boutah

Serial No: 10/036,566

Art Unit: 2143

Filing Date: December 21, 2001

Title: METHODS, TOOLS, AND INTERFACES FOR THE DYNAMIC  
ASSIGNMENT OF PEOPLE TO GROUPS TO ENABLE ENHANCED  
COMMUNICATION AND COLLABORATION

**Mail Stop Appeal Brief – Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450**

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**APPEAL BRIEF**

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Dear Sir:

Appellants' representative submits this brief in connection with an appeal of the above-identified patent application. A credit card payment form is filed concurrently herewith in connection with all fees due regarding this appeal brief. In the event any additional fees may be due and/or are not covered by the credit card, the Commissioner is authorized to charge such fees to Deposit Account No. 50-1063 [MSFTP954US].

**I. Real Party in Interest (37 C.F.R. §41.37(c)(1)(i))**

The real party in interest in the present appeal is Microsoft Corporation, the assignee of the present application.

**II. Related Appeals and Interferences (37 C.F.R. §41.37(c)(1)(ii))**

Appellants, appellants' legal representative, and/or the assignee of the present application are not aware of any appeals or interferences which may be related to, will directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**III. Status of Claims (37 C.F.R. §41.37(c)(1)(iii))**

Claims 2-17, 20, 22, 24, 26,, 28, 30, 32, 34, 36, 39-40, 43-45, 48-68, and 70-86 have been cancelled during prior prosecution without prejudice or disclaimer. Claims 1, 18, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37-38, 41, 42, 46-47 and 69 stand rejected by the Examiner. The rejection of claims 1, 18, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37-38, 41, 42, 46-47 and 69 is being appealed.

**IV. Status of Amendments (37 C.F.R. §41.37(c)(1)(iv))**

No amendments have been entered subsequent the Final Office Action dated September 29, 2006.

**V. Summary of Claimed Subject Matter (37 C.F.R. §41.37(c)(1)(v))****Independent Claim 1**

Independent claim 1 recites a computer-based system that facilitates optimizing utility of a communication. The system includes an identifier that identifies one or more communication channels that facilitate maximizing the utility of the communication wherein the utility of the communication can be based on a cost and a benefit of the communication to a contactor and a contactee. The cost and the benefit of the communication is related to one or more preferences of the contactor and the contactee. Further, the system also includes a communication group manager that manages a group

of communicating parties to facilitate optimizing the utility of the communication along a communication channel identified by the identifier wherein membership of the group of communicating parties can be based at least in part on a reciprocated communication history between entities that comprise the group. Additionally, the system also includes a groupwise communication coordinator that coordinates communication between a subset of the managed group of communicating parties to facilitate maximizing the utility of the communication. (*See e.g.*, page 2, line 11-page 3, line 28; page 6, line 29-page 10, line 12; page 10, line 13-page 22, line 26; and *see generally* FIG. 1-2).

#### **Independent Claim 69**

Independent claim 69 recites a computer implemented system for optimizing the utility of a communication involving a group member. The system comprises means for creating a group where membership of the group is based at least in part on common communication histories between members of the group, means for managing the group, and means for a recipient to communicate with a group member, where the utility of the communication is optimized based, at least in part, on a preference, and a context associated with the group to which the member belongs, the communication further optimized based on a cost and a benefit of the communication to individual members of the group, the cost and the benefit associated with the preference and the context associated with the group to which the member belongs (*See e.g.*, page 2, line 11-page 3, line 28; page 6, line 29-page 10, line 12; page 10, line 13-page 22, line 26; and *see generally* FIG. 1-2).

### **VI. Grounds of Rejection to be Reviewed (37 C.F.R. §41.37(c)(1)(vi))**

A. Claims 1, 18, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37-38, 41, 42, 46-47 and 69 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Delaney *et al.* (US 2002/0156879) in view of Haeri *et al.* (US 2003/0033421) in further view of McFadden (US 6,671,695).

## VII. Argument (37 C.F.R. §41.37(c)(1)(vii))

### A. Rejection of Claims 1, 18, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37-38, 41, 42, 46-47 and 69 Under 35 U.S.C. §103(a)

Claims 1, 18, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37-38, 41, 42, 46-47 and 69 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Delaney *et al.* (US 2002/0156879) in view of Haeri *et al.* (US 2003/0033421) in further view of McFadden (US 6,671,695). Reversal of this rejection is requested for at least the following reasons. Delaney *et al.*, Haeri *et al.* and McFadden, individually and/or in combination, do not teach or suggest all features recited in the subject claims.

To reject claims in an application under §103, an examiner must establish a *prima facie* case of obviousness. A *prima facie* case of obviousness is established by a showing of three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) ***must teach or suggest all the claim limitations***. See MPEP §706.02(j). The ***teaching or suggestion to make the claimed combination*** and the reasonable expectation of success ***must be found in the prior art and not based on the Applicant's disclosure***. See *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (emphasis added).

As people move in and out of groups, and as people's contexts change, policies concerning how such people communicate can change. Associations between people are constantly changing, for instance, membership in a group can change, relationships between members in the group can change, and responsibilities of members can change. Additionally, communication channels available to a member of a group, for the group as a whole and/or for a subset of the group may change based on the changes in association between the members of the group. Typically, desired communication paths, desired communication channels and/or desired points of contact with the group can be maintained manually *via* printed phone chains, printed organizational charts, *etc.* and can

quickly become obsolete, with the result that sub-optimal communications within and with the group can be expected.

Appellants' claimed subject matter relates generally to managing communication groups and more particularly to creating and managing distinctions about people, their context and communication policies related to such people and contexts, to facilitate dynamically assigning people to communication categories and managing such categories to facilitate maximizing utility of communications based on category membership of the contactor, the current and/or anticipated context (situation) of the contactee, and communication channel(s) available to the communicating parties.

In one aspect, the claimed subject matter provides systems and methods for dynamically assigning entities (*e.g.*, people, processes, computer components) to communication categories and for dynamically managing categories to facilitate maximizing utility of communications based on membership in such communication categories, *e.g.*, creating and managing distinctions about people, their context and their tasks, wherein context can be abstracted by examining, for example, a communication sender, the relationship of the sender to a user, the time of day at which the sender is attempting to communicate, the task(s) with which the user and/or sender are engaged, the age of project(s) to which the user and/or sender are engaged, the sender and/or user location and so on. Thus, multiple attributes concerning people, including their preferences, contexts, tasks and priorities are analyzed to facilitate building and managing collections of people and to further facilitate establishing and adapting communication policies for people in the collections.

In a further aspect, the subject matter as claimed provides a communication group manager that facilitates specifying, in terms of different groups of people, policies and preferences employed in ideal communication routing and scheduling. The communication group manager also facilitates determining, in terms of different groups of people, how automated analysis of such ideal communication routing and scheduling can be performed. Such groups of people can be defined by a user, automatically assembled based on descriptions of relationships between people, and/or automatically assembled based on a person having one or more properties that satisfy group inclusion criteria (*e.g.*, age, location, concerned about specific subject matter). The communication

group manager facilitates improving communication utility by maximizing the expected utility of a communication through actions including, but not limited to, selecting a communication channel, displaying a list of communication channels, displaying a list of communication channels sorted, for example, by the preferences of the communicating parties and/or rescheduling communications to different channels and/or times than originally selected by the communicating parties. The grouping of people into communication categories simplifies employing abstractions employed in assessing utilities of outcomes and the computation of ideal communication actions. To this end, independent claims 1 and 69 recite similar aspects, namely: *an identifier that identifies one or more communication channels that facilitate maximizing the utility of the communication, the utility of the communication based on a cost and a benefit of the communication to a contactor and a contactee, the cost and the benefit of the communication is related to one or more preferences of the contactor and the contactee*. Delaney *et al.*, Haeri *et al.*, and McFadden, alone or in combination, do not teach or suggest these aspects of the claimed subject matter.

Delaney *et al.* pertains to technology for modifying group membership, including self subscription or self unsubscription. A policy, associated with a group, controls user subscription to and unsubscription from a group. The policy can include at least four policies for subscribing/unsubscribing: open, open with filter, control through workflow and closed. An open policy allows unrestricted subscription or unsubscription; open with filter requires users to satisfy a rule to subscribe, but does not require the rule to be satisfied to unsubscribe; control through workflow requires users to subscribe or unsubscribe through a workflow process; and a close policy prohibits subscription to or unsubscription from the group. The Examiner contends the cited document discloses the salient features of the subject claims in Figs. 26 and 52, and paragraphs 107-108, 112-114, and 403. (See Final Office Action dated September 29, 2006, page 4). Appellants' representative respectfully disagrees.

Figs. 26 and 52 respectively provide a process for viewing all groups of an entity and a depiction of an identity server coupled to an authority that issues certificates. The commentary associated with Fig. 26 narrates a process that determines all groups to which a user is a member, including static memberships, dynamic memberships and

nested memberships. Further, the commentary associated with Fig. 52 describes additional system modules that can be employed to support certificate management through a workflow process. These figures however are silent with regard to maximizing utility of communication wherein the utility of communication is based on a cost and a benefit of the communication to a contactor and a contactee such that the cost and the benefit of communication is related to one or more preferences of the contactor and the contactee.

Moreover, paragraphs 107-108, 112-114, and 403 are similarly silent with regard to the pertinent features of the subject matter as claimed. Paragraphs 107-108 and 112-114 provide commentary related to Fig. 1, wherein an identity system that manages identity profiles (a set of information associated with an entity, such as, a user group or organization) is described. Additionally, paragraph 403 discloses that dynamic certificate related information can be other than certificate status, such as certificate policies and certificate costs. However, contrary to the Examiner assertion, these passages are silent with respect to maximizing utility of communication based on a cost and a benefit of the communication to a contactor and a contactee such that the cost and the benefit of the communication is related to one or more preferences of the contactor and the contactee. Nowhere in the primary document is disclosure made of these pertinent aspects as recited in the subject claims.

In addition, the Examiner acknowledges that Delaney *et al.* fails to teach or suggest ***an identifier that identifies one or more communication channels that facilitate maximizing the utility of communication***, and that ***membership of the group of communicating parties based at least in part on a reciprocated communication history between entities that comprise the group***. (See Final Office Action dated September 29, 2006, page 4). In order to rectify the aforementioned deficiencies of Delaney *et al.* the Examiner offers Haeri *et al.* and McFadden. Haeri *et al.* relates generally to computer network protocols and equipment for adjusting packet-by-packet bandwidth according to the source and/or destination port numbers carried within each such packet. More specifically, Haeri *et al.* relates to software program methods for reducing delays in real-time lookup and avoids needing expensive content-addressable memory (CAM). McFadden generally relates to the generation and management of groups of individuals

within a data processing environment, *e.g.*, for use in applications such as electronic messaging, content management, security access control and software distribution. However, like the primary document, the secondary and tertiary documents do not teach or suggest basing the utility of communications on a cost and benefit analysis of the communications from the perspective of a contactor and a contactee, such that the perspective of the contactor and the contactee is essentially based on one or more of the preferences of the contactor and the contactee.

With regard to the Response to Arguments section wherein the Examiner posits that the use of digital certificates can be interpreted as costs and group management yields a wide range of e-business needs that can be interpreted as benefits. (*See* Final Office Action dated September 29, 2006, page 9). Appellants' representative respectfully disagrees. Digital certificates or the use of digital certificates, as would be appreciated by those ordinarily skilled in the art, relate to certificates that employ digital signatures to associate a public key with an identity (*e.g.*, the name of a person or an organization, their address, etc.), such that the certificate can be used to verify that a public key belongs to a particular individual or entity. It is submitted that the use of digital certificates would not be interpreted by those of ordinary skill in the art as relating to the costs of communication.

Additionally, group management, as provided in Delaney *et al.*, yields: easy creation, maintenance, and deletion of permanent and ad hoc groups of users; modification and adaptation of groups and their access privileges with minimal disruption to the directory server's underlying schema; efficient addition and deletion of users from established groups; and delegation of administrative responsibility for group membership and subscription requests and approvals. (*See* paragraph 112). While these e-business needs may be perceived by the Examiner as benefits, it will be noted that none of these so-called benefits have any relation whatsoever to the benefit of communication between the contactor and the contactee. Thus one of ordinary skill in the art on reading the passages indicated by the Examiner would neither perceive nor comprehend them as relating to benefits in relation to the communication between the contactor and the contactee.



Accordingly, in view of the foregoing, and more particularly in view of the failure of the primary, secondary and tertiary documents to teach or suggest the salient features recited in independent claims 1 and 69, reversal of this rejection with respect to the subject independent claims (and associated dependent claims) is requested.

**B. Conclusion**

For at least the above reasons, the claims currently under consideration are believed to be patentable over the cited references. Accordingly, it is respectfully requested that the rejections of claims 1, 18, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37-38, 41, 42, 46-47 and 69 be reversed.

If any additional fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Respectfully submitted,  
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**VIII. Claims Appendix (37 C.F.R. §41.37(c)(1)(viii))**

1. A computer-based system that facilitates optimizing utility of a communication, the system comprising:

an identifier that identifies one or more communication channels that facilitate maximizing the utility of the communication, the utility of the communication based on a cost and a benefit of the communication to a contactor and a contactee, the cost and the benefit of the communication is related to one or more preferences of the contactor and the contactee;

a communication group manager that manages a group of communicating parties to facilitate optimizing the utility of the communication along a communication channel identified by the identifier, membership of the group of communicating parties based at least in part on a reciprocated communication history between entities that comprise the group; and

a groupwise communication coordinator that coordinates communication between a subset of the managed group of communicating parties to facilitate maximizing the utility of the communication.

2-17. (Cancelled).

18. The system of claim 1, where the communication occurs between one or more contactors and one or more contactees and where the identifier comprises:

- a processor;
- a preference resolver that analyzes a contactee preference data and a contactor preference data and produces a resolved preference data;
- a context analyzer that analyzes a contactee context data and a contactor context data and produces an analyzed context data;
- a channel analyzer that analyzes one or more communication channels between a contactor and a contactee and produces a communication channel data; and
- a communication establisher that establishes a communication between the contactor and the contactee based, at least in part, on the resolved preference data, the analyzed context data, communicating party selection data and the communication channel data.

19. The system of claim 1, the utility optimization based at least in part upon whether two or more communicating parties are concurrently engaged in a related activity, or are likely to become concurrently engaged in a related activity.

20. (Cancelled).

21. The system of claim 1, the utility optimization based at least in part upon whether two or more communicating parties are concurrently engaged in a similar activity, or are likely to become concurrently engaged in a similar activity.

22. (Cancelled).

23. The system of claim 1, the utility optimization based at least in part upon whether two or more communicating parties are concurrently processing one or more related documents, or are likely to concurrently process one or more related documents.

24. (Cancelled).

25. The system of claim 1, the utility optimization based at least in part upon whether two or more communicating parties are concurrently viewing one or more related documents, or are likely to concurrently view one or more related documents.

26. (Cancelled).

27. The system of claim 1, the utility optimization based at least in part upon whether two or more communicating parties are concurrently engaged in a shared project, or are likely to become concurrently engaged in a shared project.

28. (Cancelled).

29. The system of claim 1, the utility optimization based at least in part upon whether two or more communicating parties are scheduled to communicate within a pre-defined period of time, or have communicated within a pre-defined period of time.

30. (Cancelled).

31. The system of claim 1, the utility optimization based at least in part upon whether two or more communicating parties are scheduled to meet within a pre-defined period of time, or have met within a pre-defined period of time.

32. (Cancelled).

33. The system of claim 1, the utility optimization based at least in part upon whether a communicating party has engaged in one or more pre-defined activities of interest within a pre-defined period of time, or is likely to engage in one or more pre-defined activities of interest within a pre-defined period of time.

34. (Cancelled).

35. The system of claim 1, the utility optimization based at least in part upon whether a communicating party has purchased one or more pre-defined items of interest, or has registered an interest in one or more pre-defined items of interest.

36. (Cancelled).

37. (Original) The system of claim 1, the utility optimization based at least in part upon the degree to which a communicating party is trusted by one or more other communicating parties.

38. The system of claim 1 where an expected utility for the communication is computed by  $E[u(d_i, c)] = \sum_{s_j \in S} m(s_j, d_i) p(s_j | d_i, c)$  where  $p(s_j | d_i, c)$  represents a probability of achieving a future state  $s_j$  given a decision  $d$  concerning situation  $c$ , capturing communication channel parameters, nature of a contactor and a context of the a contactee.

39-40. (Cancelled).

41. The system of claim 1, where a utility function employed to compute the utility of the communication is a combination of functions that separately consider the cost and the benefit of the communication to the contactor and contactee.

42. The system of claim 1, where a utility function employed to compute the utility of the communication is a multi-linear combination of one or more weighted terms associated with the contactor and contactee.

43-45. (Cancelled).

46. The system of claim 1 where the group wise communication coordinator comprises:

- a group wise communication assembler that assembles the group of communicating parties, and

- a group wise communication scheduler that schedules a time for the group communication that maximizes the utility of the communication.

47. The system of claim 46, where the groupwise communication assembler:

- identifies one or more group member classifications required for the group communication;

- identifies a minimal number of communicating parties from each of the one or more group member classifications required for the group communication, and

- verifies that at least the minimal number of communicating parties from each of the one or more group member classifications are available for the group communication.

48-68. (Cancelled).

69. A computer implemented system for optimizing the utility of a communication involving a group member, the system comprising:

means for creating a group where membership of the group is based at least in part on one or more common communication history between members of the group;

means for managing a group; and

means for a recipient to communicate with a group member, where the utility of the communication is optimized based, at least in part, on a preference, and a context associated with the group to which the member belongs, the communication further optimized based on a cost and a benefit of the communication to individual members of the group, the cost and the benefit associated with the preference and the context associated with the group to which the member belongs.

70-86. (Cancelled).

**IX. Evidence Appendix (37 C.F.R. §41.37(c)(1)(ix))**

None.

**X. Related Proceedings Appendix (37 C.F.R. §41.37(c)(1)(x))**

None.